^{128}La ε decay (<1.4 min) 1997As05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar	NDS 129, 191 (2015)	28-Feb-2015

Parent: ^{128}La: E=0.0+x; $J^\pi=(1^+,2^-)$; $T_{1/2}$<1.4 min; Q(ε)=6.75×10^3 *5*; %ε+%$β^+$ decay=100.0

1997As05: ^{nat}Mo+^{36}Ar, E=195 MeV; La isomer from ^{128}Ce ε decay; on-line mass separation; γ, γγ, γγ(θ), γ(t); 5 HPGe detectors.

1992SiZZ: ^{116}Sn(^{14}N,2n); B(E2).

α: Additional information 1.

γγ-angular correlation coefficient to 0 - 2 - 0 spin sequences (1997As05)

cascade (keV)	A_2	A_4
658.5γ - 284.1γ	0.326(21)	1.086(38)
1426γ - 284.1γ	0.43(11)	0.96(19)
1934.8γ - 284.1γ	0.259(35)	1.042(62)
2345γ - 284.1γ	0.51(9)	1.21(15)

^{128}Ba Levels

The decay scheme is on the basis results of γγ-coincidence and Eγ sums from 1997As05. Levels at 763.3, 884.5, and 1321.6 are added on the bases of results from 1992SiZZ.

E(level)†	Jπ‡	$T_{1/2}$‡
0.0	0^+	2.43 d *5*
284.10 *8*	2^+	
763.41 *13*	4^+	5.34 ps *24*
884.55 *15*	2^+	3.4 ps *4*
942.2 *6*	0^+	
1321.1 *5*	2^+	
1710.1 *10*	0^+	
2218.9 *5*	0^+	
2347.3 *5*	2^+	
2629.1 *10*	0^+	

† E(levels) are based on a least-squares fit to the Eγ's.

‡ From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ ‡	Iε‡	Log *ft*	I(ε+β+)†‡	Comments
(4.12×10^3 *5*)	2629.1	14 *3*	5.6 *23*	6.05 *23*	20 *3*	av Eβ=1359 *187*; εK=0.24 *8*; εL=0.032 *11*; εM+=0.009 *3*
(4.40×10^3 *5*)	2347.3	≥5	≥1	≤6.7	≥6	av Eβ=1490 *188*; εK=0.19 *7*; εL=0.026 *9*; εM+=0.0073 *25*
(4.53×10^3 *5*)	2218.9	59 *11*	15 *6*	5.69 *22*	74 *12*	av Eβ=1550 *188*; εK=0.18 *6*; εL=0.024 *8*; εM+=0.0067 *22*
(5.04×10^3 *5*)	1710.1	10 *2*	1.8 *6*	6.72 *21*	12 *2*	
(5.81×10^3 *5*)	942.2	91 *3*	9 *3*	6.13 *17*	100	av Eβ=2153 *191*; εK=0.080 *21*; εL=0.011 *3*;

Continued on next page (footnotes at end of table)

^{128}La ε decay (<1.4 min) 1997As05 (continued)

ε,β+ radiations (continued)

E(decay)	E(level)	Iβ+ ‡	Iε‡	Log *ft*	I(ε+β+)†‡	Comments
						εM+=0.0030 *8*
(6.75×10^3 *5*)	0.0	≥46	≥2.8	≤6.8	≥49	av Eβ=2603 *193*; εK=0.049 *11*; εL=0.0065 *15*; εM+=0.0018 *4*

† From 1997As05, unless otherwise noted. For intensity per 100 decays, multiply by 0.1444.
‡ Absolute intensity per 100 decays.

γ(^{128}Ba)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.@	α	Comments
284.10# *8*	284.10	2+	0.0	0+	E2	0.0538	
378.5‡	1321.1	2+	942.2	0+			
436.7‡	1321.1	2+	884.55	2+			I_γ: <0.74 for I(378.5γ)=100 (1992SiZZ).
479.31# *10*	763.41	4+	284.10	2+	E2	0.01108	
557.4‡	1321.1	2+	763.41	4+			I_γ: 0.26 *22* for I(378.5γ)=100 (1992SiZZ).
600.5# *2*	884.55	2+	284.10	2+	M1+E2	0.00836	
658.0# *6*	942.2	0+	284.10	2+	E2	0.00479	E_γ: unplaced in 1977Zo02.
884.5# *2*	884.55	2+	0.0	0+	E2	0.00237	
943.1&	942.2	0+	0.0	0+			E_γ: from 1992SiZZ. I_γ: <0.18 for I(658.5γ)=100 (1992SiZZ).
1037.1‡	1321.1	2+	284.10	2+			I_γ: <3.24 for I(378.5γ)=100 (1992SiZZ).
1321.6‡	1321.1	2+	0.0	0+			I_γ: =0.9 *3* for I(378.5γ)=100 (1992SiZZ).
1426 *1*	1710.1	0+	284.10	2+	E2	9.26×10^{-4}	
1934.8 *5*	2218.9	0+	284.10	2+	E2	7.52×10^{-4}	
2063.2 *5*	2347.3	2+	284.10	2+			
2345 *1*	2629.1	0+	284.10	2+	E2	8.05×10^{-4}	

† From 1997As05, unless otherwise noted. Uncertainties are assumed by evaluator.
‡ From 1992SiZZ. Iγ are calculated from relative B(E2)(378.5γ)=100 (evaluator).
# From Adopted Gammas.
@ From γγ(θ) and decay scheme.
& Placement of transition in the level scheme is uncertain.

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Legend

- - - - - - ► γ Decay (Uncertain)

Decay Scheme